combination thereof.

3. A molecule of claim 1 or 2 in which at least one of the CDRs of the heavy chain of MN14 and one of the CDRs of the light chain of MN14 are preserved in a form (e.g., sFv or Fab) that maintains the binding of the CEA antigen, and/or in which the linker is of different composition.

4. A molecule of claim 1, 2 or 3 which has been modified in DNA or protein sequence but which retains the specificity and action of these molecules.

5. The use of molecules of claims 1, 2, 3 or 4 expressed in T cells or NK cells or other effector cells to treat patients with cancers expressing the CEA antigen.

6. The combination use of molecules of claims 1, 2, 3 or 4 expressed in T cells or NK cells or other effector cells to treat patients with cancers expressing the CEA antigen, together with each other or with heterologous constructs to engage additional stimulatory and functional properties of the effector cells to enhance the antitumor therapeutic efficacy.

Abstract of the Disclosure

This invention relates to a specific humanized antibody against carcinoembryonic antigen (CEA) called hMN14 when prepared as a chimeric molecule with signaling molecules of T cells and other effector cells, and the use thereof in the treatment of cancers expressing CEA.